

maintained under anaerobic conditions. The present invention also is directed to the dairy product produced by the method. In certain instances, the method is performed so as to impart a unique aroma to the dairy product.

The Pending Claims

Claims 1-20 are currently pending. Claims 1-6, 8-14, and 18-20 are directed to a method for preparing a dairy product or a food comprising a dairy product. Claims 7 and 15-17 are directed to a dairy product.

The Claim Amendments

Claims 4, 13, and 14 have been amended to point out more particularly and claim more distinctly the present invention. Specifically, claim 4 has been amended to depend from claim 2. Claims 13 and 14, both of which recite identical claims depending from claim 3, have been amended to depend from claims 4 and 5, respectively. Amended claim 4 is supported by originally filed claim 4 of the corresponding PCT application. Amended claims 13 and 14 are supported by originally filed claim 6 of the corresponding PCT application. Accordingly, no new matter has been added by way of these amendments. Separate documents setting forth the precise changes to the claims, as well as the text of all the pending claims as amended, are attached hereto.

The Office Action

Claims 6, 11-14, and 20 have been rejected under 35 U.S.C. § 112, first paragraph, for allegedly containing subject matter, which is not sufficiently described in the specification. Claims 1-20 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly being obvious in view of Kwak et al., Duitschaeffer et al., Saita et al. (EP 0346884), or Kamaly et al. Reconsideration of these rejections is hereby requested.

Discussion of Rejection under 35 U.S.C. § 112, first paragraph

Claims 6, 11-14, and 20 have been rejected under Section 112, first paragraph, for allegedly containing subject matter, which was not described in the specification in such a way as to enable one skilled in the art to practice the claimed invention. The rejection is respectfully traversed for the reasons set forth below.

According to the Patent Office, the instant specification does not describe what is encompassed by the term "thermized." On the contrary, the term "thermized" is sufficiently described in the specification such that the ordinarily skilled artisan would understand the

metes and bounds of the claims. For example, at page 7, lines 8-10, it is clear that "thermized" is meant to refer to pasteurization or sterilization, as it is indicated that the product can be "thermized" to increase the keeping quality. Thus, in view of the specification, an ordinarily skilled artisan would understand the metes and bounds of the claims, and would be able to practice the invention as presently claimed. Accordingly, the rejection under Section 112, first paragraph, should be withdrawn.

Discussion of Rejection under 35 U.S.C. § 102(b) or 35 U.S.C. § 103(a)

Claims 1-20 have been rejected under Section 102(b) as allegedly being anticipated by Kwak et al., Duitschaeffer et al., Saita et al. (EP 0346884), or Kamaly et al., or, in the alternative, under 35 U.S.C. § 103(a) as allegedly being obvious in view of the references. These rejections are respectfully traversed for the reasons set forth below.

To anticipate a claim, a reference must disclose every element of that claim (M.P.E.P. § 2131). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the cited prior art (M.P.E.P. § 2143.03). All of the pending claims require that either (a) a medium comprising milk or a milk product is treated under aerobic conditions prior to subjecting the medium to anaerobic conditions or (b) a medium comprising milk or a milk product is treated in such a way so as to impart an aroma on the resulting dairy product.

The Patent Office contends that the combination of aerobic and anaerobic conditions, as claimed, is inherently taught by, or at least obvious over, the prior art. The Patent Office concedes that the claims differ from the cited art as to the specific recitation of aerobic and anaerobic conditions. However, according to the Patent Office, the combination of these conditions is inherently used in the prior art inasmuch as mixing (aerobic) and closed containers (anaerobic) are utilized. Contrary to the assertion by the Patent Office, none of the above-identified references teaches or even suggests that an aerobic step is necessary for the subsequent formation of characteristic aromas without changes in the composition of the dairy product. These references are described in more detail below.

The Kwak et al. reference discloses a method for manufacturing Kefir using a non-lactose fermenting yeast. The method comprises inoculating yeast starter cultures, which are composed of lactose-negative microorganisms, into reconstituted non-defatted milk (NDM) containing glucose, and then incubating the cultures to produce alcohol. The fermentation process is carried out under anaerobic conditions. In a second step, lactic acid bacteria are added to the cultures, which are then inoculated in reconstituted NDM under anaerobic conditions. The Kwak et al. reference, however, does not disclose, or even reasonably suggest, a ripening step in which a medium comprising milk or a milk product is treated with

a lactose-negative microorganism under aerobic conditions. Fermentation of a medium using lactose-negative microorganisms under aerobic conditions causes the microorganisms to degrade the fatty material and the proteins in the medium in the absence of sugar consumption, thus resulting in no alcohol production. In contrast, the anaerobic conditions employed in the method of the Kwak et al. reference causes the lactose-negative microorganisms to convert glucose into alcohol without degradation of the fatty material or the proteins. In accordance with the invention, a significant portion of the flavors ultimately generated are provided by degradation products of fatty material and proteins, such as methyl ketones or aldehydes. For example, at page 10, lines 9-11 of the present application, branched chain aldehydes are stated to be important compounds that could be detected in the final dairy product obtained. The Kwak et al. reference does not teach a method comprising an aerobic step to promote fatty acid degradation. As such, the Kwak et al. reference does not anticipate, nor render obvious, the invention as defined by the pending claims.

The Duitschaever et al. reference also concerns a method for producing Kefir. The method comprises a first step of fermentation of a milk product by lactic acid bacteria under anaerobic conditions as evidenced by the decrease in pH (see, for example, page 4, column 5, lines 38-39, page 4, column 6, lines 16-17, and page 4, column 6, lines 50-54), which can only be due to the production of lactic acid. A second step involving the addition of lactose-negative microorganisms (*S. cerevisiae*) to the fermented product in glass bottles which are subsequently sealed with a crown cap (i.e., under anaerobic conditions) is then performed. Accordingly, the Duitschaever et al. reference does not disclose, or even reasonably suggest, the first step of the presently claimed method wherein a medium is treated with lactose-negative microorganisms under aerobic conditions. Moreover, because the Duitschaever et al. reference fails to teach an aerobic step, the aroma imparted to the resulting dairy product will not be the same as that described by the present invention. Indeed, the present invention is directed to a dairy product which, as regards texture, corresponds to a known dairy product, such as yogurt or quark, but which has a different flavor and/or odor. Such characteristics are attributed to an initial aerobic ripening step of milk or a milk product followed by maintaining the milk or milk product under anaerobic conditions (see, for example, the instant specification at page 2, lines 20-29). As such, the Duitschaever et al. reference does not anticipate, nor render obvious, the invention as defined by the pending claims.

Similarly, the Saita et al. reference discloses a method for preparing Kefir involving the use of lactose-negative microorganisms. The method used is most notably described in Example 1 and comprises a first step of fermentation of a milk product with lactic acid bacteria under anaerobic conditions, as described above in regards to the Duitschaever et al. reference. In a second step, sugars are added for alcohol fermentation before continuation of

the fermentation process using a lactose-negative microorganism (*S. bisporus*) under anaerobic conditions. Accordingly, the Saita et al. reference does not disclose, or even reasonably suggest, the first step of the presently claimed method wherein a medium is treated with lactose-negative microorganisms under aerobic conditions. Moreover, because the Saita et al. reference fails to teach an aerobic step, the aroma imparted to the resulting dairy product will differ from that of the present invention. As such, the Saita et al. reference does not anticipate, nor render obvious, the invention as defined by the pending claims.

The Kamaly et al. reference discloses a method for manufacturing cheddar cheese. The method involves the use of microorganisms, which are both lactose-negative and proteinase-negative. For example, the Kamaly et al. reference describes inoculating cheese milk with mutant *Streptococcus lactis*. Since the inoculated bacteria are growing inside the mass of the cheese milk, the method disclosed in the Kamaly et al. reference is performed under anaerobic conditions. Moreover, because the Kamaly et al. reference fails to teach an aerobic step, the aroma imparted to the resulting dairy product will differ from that of the present invention. Accordingly, the presently claimed method comprising two different steps in which aerobic and anaerobic conditions are interchanged is clearly both novel and inventive over the Kamaly et al. reference.

In view of the above, it is evident that none of the cited references teach, or even reasonably suggest, a method for preparing a dairy product comprising a first step of treating a medium under aerobic conditions with a lactose-negative microorganism and a second step of maintaining the medium under anaerobic conditions. Moreover, none of the cited references suggest the possibility of adding an aerobic step in the process, which would facilitate the production of aromas during the subsequent anaerobic process. Accordingly, the rejection of claims 1-20 under Sections 102(b) or 103(a) should be withdrawn.

Conclusion

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

In re Appln. of Vermin et al.
Application No. 09/787,004

Respectfully submitted,



Mark Joy, Reg. No. 35,562
LEYDIG, VOIT & MAYER, LTD.
Two Prudential Plaza, Suite 4900
180 North Stetson
Chicago, Illinois 60601-6780
(312) 616-5600 (telephone)
(312) 616-5700 (facsimile)

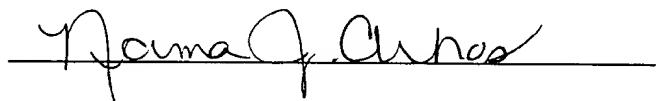
Date: June 27, 2002

CERTIFICATE OF MAILING

I hereby certify that this RESPONSE TO OFFICE ACTION (along with any documents referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231.

Date:

June 28, 2002





PATENT
Attorney Docket No. 209684

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Vermin et al.

Application No. 09/787,004

Filed: May 23, 2001

Art Unit: 1761

Examiner: Leslie Wong

For: DAIRY PRODUCT AND METHOD
FOR PREPARING SAME

**AMENDMENTS TO CLAIMS MADE IN RESPONSE TO OFFICE ACTION DATED
FEBRUARY 11, 2002**

(additions indicated by underlining, deletions indicated by brackets).

4. (Twice Amended) The method according to claim [10] 2, in which the bacterium originates from one of the following set of strains: *Micrococcus luteus*, *Arthrobacter*, *Corynebacterium* or *Arthrobacter ssp.*

13. (Amended) The method of claim [3] 4 wherein the dairy product is thermized.

14. (Amended) The method of claim [3] 5 wherein the dairy product is thermized.

COPY OF PAPERS
ORIGINALLY FILED